U.S.S.N.:

10/679,726

Filing Date: October 6, 2003

EMC Docket No.: EMC-03-100CIP2

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the

Application.

Listing of Claims:

(Currently amended) In a data storage environment having a first volume of data 1.

denominated as the source being stored on a data storage system, and a second volume of data

denominated as a clone and which has data content that is a copy of the data content of the

source being stored on the data storage system or on another data storage system, a method,

operable on a computer system, for managing data content during a restoration of the source, the

method comprising the steps of:

restoring the source by copying data content from the clone to overwrite the data content

of the source, allowing host reads and writes to the source during the restoration restore;

if preserving the data content of the clone is selected, then not allowing the data content

of the clone to be overwritten by host writes during the restoring step; and

if preserving the data content is not selected, then overwriting the data contents of the

clone during the restoring step restoration and determining extents of the source affected by any

host write request; and

if any extents affected by the host write request are involved during the restoring step in

the restoration and preserving is not selected, then setting an indicator to indicate that the extents

need to be re-copied.

-3-

10/679,726

U.S.S.N.:

Filing Date: October 6, 2003

EMC Docket No.: EMC-03-100CIP2

2. (Original) The method of claim 1, wherein the source and the clone are each represented

by respective first and second logical units.

The method of claim 1, wherein a map denominated as a protected restore 3.

map is used to track extents of the source that are modified during the preserving step if selected.

(Previously amended) The method of claim 1, wherein a map denominated as a clone 4.

delta map is used to track extents of the clone that are different between the clone and the source.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Currently amended) A system for managing data content during restoration of data

from a second volume of data to a first volume of data, the system comprising:

a data storage system having a first volume of data denominated as the source being

stored on a data storage system, and a second volume of data denominated as the clone and

which has data content that is a copy of the data content of the source being stored on the data

storage system or on another data storage system;

computer-executable program logic configured for causing the following computer-

executed steps to occur:

-4-

U.S.S.N.:

10/679,726

Filing Date: October 6, 2003

EMC Docket No.: EMC-03-100CIP2

restoring the source by copying data content from the clone to overwrite the data content

of the source, allowing host reads and writes to the Source during the restoration restore;

if preserving the data content of the clone is selected, then not allowing the data content

of the clone to be overwritten by host writes during the restoring step; and

if preserving the data content is not selected, then overwriting the data contents of the

clone during the restoring step restoration and determining extents on the source affected by any

host write request; and

if any extents affected by the host write request are involved during the restoring step in

the restoration and preserving is not selected, then setting an indicator to indicate that the extents

need to be re-copied.

9. (Currently amended) The method system of claim 8, wherein the source and the clone

are each represented by respective first and second logical units.

10. (Currently amended) The method system of claim 8, wherein a map denominated as a

protected restore map is used to track extents of the source that are modified during the

preserving step if selected.

11. (Currently amended) The method system of claim 8, wherein a map denominated as a

clone delta map is used to track extents of the clone that are different between the clone and the

source.

-5-

U.S.S.N.:

10/679,726

Filing Date: October 6, 2003

EMC Docket No.: EMC-03-100CIP2

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

(Currently amended) A program product for use in a data storage environment and 15.

being for managing data content during restoration of data from a second volume of data to a

first volume of data, wherein the data storage environment includes:

a data storage system having a first volume of data denominated as the source being

stored on a data storage system, and a second volume of data denominated as the clone and

which has data content that is a copy of the data content of the source being stored on the data

storage system or on another data storage system; and

the program product includes computer-executable logic contained on a computer-

readable medium and which is configured for causing a computer to execute the steps of:

restoring the source by copying data content from the clone to overwrite the data content

of the source, allowing host reads and writes to the Source during the restoration restore;

if preserving the data content of the clone is selected, then not allowing the data content

of the clone to be overwritten by host writes during the restoring step; and

if preserving the data content is not selected, then overwriting the data contents of the

clone during the restoring step restoration and determining extents on the source affected by any

host write request; and

if any extents affected by the host write request are involved during the restoring step in the

restoration and preserving is not selected, then setting an indicator to indicate that the extents

need to be re-copied.

-6-